Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. - 31. (cancelled)

32. (currently amended) ~~The method of claim 13~~ A method of identifying an agent that alters the lifespan of a eukaryotic cell, the method comprising:

a) providing a eukaryotic cell characterized by a first replicative capacity;

b) contacting the eukaryotic cell with an agent to provide a treated eukaryotic cell, wherein the agent is a drug;

c) evaluating a phenotype of the treated eukaryotic cell, in the presence of the agent, wherein the phenotype is stress survival; and

d) evaluating replicative capacity of the treated eukaryotic cell in the presence of the agent, wherein modulation of the phenotype and replicative capacity, relative to a corresponding phenotype and capacity of a eukaryotic cell not contacted with the agent, identifies the agent as an agent that alters the lifespan of a eukaryotic cell.

33. (currently amended) ~~The method of claim 13~~ A method of identifying an agent that alters the lifespan of a eukaryotic cell, the method comprising:

a) providing a eukaryotic cell characterized by a first replicative capacity;

b) contacting the eukaryotic cell with an agent to provide a treated eukaryotic cell, wherein the agent is a peptide;

c) evaluating a phenotype of the treated eukaryotic cell, in the presence of the agent, wherein the phenotype is stress survival; and

d) evaluating replicative capacity of the treated eukaryotic cell in the presence of the agent, wherein modulation of the phenotype and replicative capacity, relative to a corresponding phenotype and capacity of a eukaryotic cell not contacted with the agent, identifies the agent as an agent that alters the lifespan of a eukaryotic cell.

34. (currently amended) ~~The method of claim 13~~A method of identifying an agent that alters the lifespan of a eukaryotic cell, the method comprising:

a) providing a eukaryotic cell characterized by a first replicative capacity;

b) contacting the eukaryotic cell with an agent to provide a treated eukaryotic cell, wherein the agent is an oligonucleotide;

c) evaluating a phenotype of the treated eukaryotic cell, in the presence of the agent, wherein the phenotype is stress survival; and

d) evaluating replicative capacity of the treated eukaryotic cell in the presence of the agent, wherein modulation of the phenotype and replicative capacity, relative to a corresponding phenotype and capacity of a eukaryotic cell not contacted with the agent, identifies the agent as an agent that alters the lifespan of a eukaryotic cell.

35. (cancelled)

36. (currently amended) ~~The method of claim 13~~ A method of identifying an agent that alters the lifespan of a eukaryotic cell, the method comprising:

a) providing a eukaryotic cell characterized by a first replicative capacity;

b) contacting the eukaryotic cell with an agent to provide a treated eukaryotic cell, wherein the agent is other than a gene;

c) evaluating a phenotype of the treated eukaryotic cell, in the presence of the agent, wherein the phenotype is stress survival; and

d) evaluating replicative capacity of the treated eukaryotic cell in the presence of the agent, wherein modulation of the phenotype and replicative capacity, relative to a corresponding

phenotype and capacity of a eukaryotic cell not contacted with the agent, identifies the agent as an agent that alters the lifespan of a eukaryotic cell.

37. – 48. (cancelled)

49. (new) The method of claim 32 wherein the phenotype is a function of growth to higher saturation density than the cells provided in (a).

50. (new) The method of claim 33 wherein the phenotype is a function of growth to higher saturation density than the cells provided in (a).

51. (new) The method of claim 34 wherein the phenotype is a function of growth to higher saturation density than the cells provided in (a).

52. (new) The method of claim 36 wherein the phenotype is a function of growth to higher saturation density than the cells provided in (a).

53. (new) The method of claim 32 wherein the phenotype is heat shock resistance.

54. (new) The method of claim 33 wherein the phenotype is heat shock resistance.

55. (new) The method of claim 34 wherein the phenotype is heat shock resistance.

56. (new) The method of claim 36 wherein the phenotype is heat shock resistance.

57. (new) The method of claim 32 wherein the phenotype is starvation resistance.

58. (new) The method of claim 33 wherein the phenotype is starvation resistance.

59. (new) The method of claim 34 wherein the phenotype is starvation resistance.

60. (new) The method of claim 36 wherein the phenotype is starvation resistance.

61. (new) The method of claim 32 wherein the phenotype is paraquat resistance.

62. (new) The method of claim 33 wherein the phenotype is paraquat resistance.

63. (new) The method of claim 34 wherein the phenotype is paraquat resistance.

64. (new) The method of claim 36 wherein the phenotype is paraquat resistance.

65. (new) The method of claim 32 wherein the phenotype is caffeine resistance.

66. (new) The method of claim 33 wherein the phenotype is caffeine resistance.

67. (new) The method of claim 34 wherein the phenotype is caffeine resistance.

68. (new) The method of claim 36 wherein the phenotype is caffeine resistance.

69. (new) The method of claim 32 wherein the eukaryotic cell is a yeast cell.

70. (new) The method of claim 33 wherein the eukaryotic cell is a yeast cell.

71. (new) The method of claim 34 wherein the eukaryotic cell is a yeast cell.

72. (new) The method of claim 36 wherein the eukaryotic cell is a yeast cell.

73. (new) The method of claim 32 wherein the eukaryotic cell is a genetically-altered eukaryotic cell which has a different replicative capacity relative to a reference eukaryotic cell.

74. (new) The method of claim 33 wherein the eukaryotic cell is a genetically-altered eukaryotic cell which has a different replicative capacity relative to a reference eukaryotic cell.

75. (new) The method of claim 34 wherein the eukaryotic cell is a genetically-altered eukaryotic cell which has a different replicative capacity relative to a reference eukaryotic cell.

76. (new) The method of claim 36 wherein the eukaryotic cell is a genetically-altered eukaryotic cell which has a different replicative capacity relative to a reference eukaryotic cell.

77. (new) The method of claim 73, 74, 75, or 76 wherein the genetically altered eukaryotic cell comprises a mutation in a chromosomal gene.

78. (new) The method of claim 77 wherein the step d) of evaluating comprises: (i) calculating the number of divisions of the treated eukaryotic cell, and (ii) comparing the number of divisions in (i) with the average number of divisions for the eukaryotic cell in the absence of the agent to be tested.

79. (new) The method of claim 32 wherein the step d) of evaluating comprises: (i) calculating the number of divisions of the treated eukaryotic cell, and (ii) comparing the number of divisions in (i) with the average number of divisions for the eukaryotic cell in the absence of the agent to be tested.

80. (new) The method of claim 33 wherein the step d) of evaluating comprises: (i) calculating the number of divisions of the treated eukaryotic cell, and (ii) comparing the number of divisions in (i) with the average number of divisions for the eukaryotic cell in the absence of the agent to be tested.

81. (new) The method of claim 34 wherein the step d) of evaluating comprises: (i) calculating the number of divisions of the treated eukaryotic cell, and (ii) comparing the number of divisions in (i) with the average number of divisions for the eukaryotic cell in the absence of the agent to be tested.

82. (new) The method of claim 36 wherein the step d) of evaluating comprises: (i) calculating the number of divisions of the treated eukaryotic cell, and (ii) comparing the number of divisions in (i) with the average number of divisions for the eukaryotic cell in the absence of the agent to be tested.

83. (new) The method of claim 32, 33, 34, or 36 wherein the treated eukaryotic cell is labeled on the cell surface, and the step c) of evaluating comprises detecting the labeled, treated eukaryotic cell.

84. (new) The method of claim 83 wherein the treated eukaryotic cell is fluorescently labeled.

85. (new) The method of claim 32, 33, 34, or 36 wherein the treated eukaryotic cell is cultured for a period of time greater than time sufficient for the first replicative capacity.

86. (new) The method of claim 57, 58, 59, or 60 wherein the step c) of evaluating comprises maintaining the treated eukaryotic cell under starvation conditions.

87. (new) The method of claim 69, 70, 71, or 72 wherein the phenotype is heat shock resistance.

88. (new) The method of claim 73, 74, 75, 76, 79, 80, 81, or 82 wherein the phenotype is heat shock resistance.

89. (new) The method of claim 69, 70, 71, or 72 wherein the phenotype is starvation resistance.

90. (new) The method of claim 73, 74, 75, 76, 79, 80, 81, or 82 wherein the phenotype is starvation resistance.

91. (new) The method of claim 73, 74, 75, 76, 79, 80, 81, or 82 wherein the phenotype is paraquat resistance.

92. (new) The method of claim 73, 74, 75, 76, 79, 80, 81, or 82 wherein the phenotype is caffeine resistance.